

PSYCHE

NOTES ON THE BUTTERFLIES OF MARGARITA ISLAND, CARACAS, AND CARUPANO, VENEZUELA.

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IN 'The Ibis' for January, 1895, Dr. P. L. Sclater suggested to ornithologists the advisability of turning their attention to the Island of Margarita as a field hitherto unworked. As a result of this notice, Captain Wirt Robinson, U. S. A., visited this locality in the summer of 1895, bringing back an extensive collection of the birds of the island, a number of insects, and some mammals. Unfortunately, the butterflies were subsequently lost; but on working up the mammals and birds, no less than thirteen new species were discovered, two of the former, and eleven of the latter.

Having determined to spend the summer of 1901 in zoölogical investigation in some little known part of South America, I communicated with Captain Robinson, with the result that I decided to visit this locality, and make a study of its fauna, as complete as time would allow, to form a sort of supplement to his work.

Accordingly, on the 15th. day of June, 1901, I left New York for La Guaira, en route for Margarita. At La Guaira I stayed a day and a half, leaving there for the more pleasant city of Caracas, to await the arrival of the steamer which was to take me to Carupano. During my stay of about a week at Caracas, I made daily excursions into the surrounding country for insects; but a combination of circumstances prevented my making any captures while at La Guaira. At Carupano also, while hunting up a small boat in which to make the journey across the channel, I could not spare any time for collecting, but on my way back I obtained a few specimens here.

Reaching Porlamar, on the southern shore of the island, on July 3rd., I at once proceeded to the little town of El Valle, situated about three miles from the sea, in a pleasant valley at the foot of the central mountain. This village is partially surrounded by groves of cocoanut palms, and is a very convenient place of residence, the climatic conditions being much more agreeable than in the towns nearer the coast, while it is easy of access both to the hot country near Porlamar, and the mountain forest. The region is peculiarly healthful, and too much cannot

be said of its inhabitants, who seem to consider it an honor to assist the collector in every way. In this town I resided until July 25th., when circumstances compelled me to leave suddenly, much against my will, as my collections were as yet far from complete. During my stay, however, I secured specimens of all the butterflies observed, with the exception of a *Morpho*, an *Opsiphanes*(?), a *Papilio*, a *Urania*, and *Colaenis julia*; but I am confident that more extended researches, over parts of the island which I was unable to visit, will bring to light many additions to the following list, and it is much to be desired that sometime in the future, others, profiting by the experience of Captain Robinson and myself, will visit this interesting locality and make a much more exhaustive report on its entomological fauna.

The island of Margarita is situated midway between La Guaira and Trinidad, directly north of the town of Cumana, being about seventeen miles distant from the nearest point of the mainland. Its greatest length from east to west is forty-two miles. It consists of two portions, joined by a narrow swampy isthmus of about twelve miles in length, the eastern part being the larger, in the shape, roughly, of a pentagon, some twenty miles across, while the western is an irregular quadrangle, twelve miles long by nine in width. In the eastern part there is a mountain of 3,240 feet altitude, thickly wooded almost to the base; in the western another rises to the height of 2,300 feet, but is practically barren.* At the time of my visit the only way of reaching the island was to take a small trading vessel from Carupano or Cumana, which ports could be easily reached by the boats of the French or Dutch West India Mail. Now, however, the boats of the Royal Mail Steam Packet Company, plying fortnightly between Barbados and La Guaira call in at both Carupano and Porlamar, Margarita.

Margarita is divisible into three well defined life zones, as follows:

I. The almost flat costal plain, which extends all about the island occupying a strip averaging two or three miles in width, hot and sandy, supporting only a very scanty vegetation, which consists of post and melon cactus, with patches of "tuna,"** and scattering thorn-trees. I saw no butterflies whatever in this region; but among birds the burrowing owls (*Speotyto*) are exclusively found here, and the troupial (*Icterus*), scaled Dove (*Scardafella*) Buzzard (*Buteo*), and parrakeet (*Conurus*) prefer it to any other. Here also I found the trail of a rattle-snake (*Crotalus*) which appears to be quite rare, as all the natives assured me that they never had seen a snake on the island, and I found no trace of others in all my wanderings. The armadillo is reported to occur in this district.

II. The intermediate zone, consisting of a rough hilly country, with a large

* A map of the island was published in the Proceedings U. S. National Museum, XVIII, pl. XXXIII.

**A small, long-spined prickly pear, *Opuntia tuna*.

amount of scrubby growth, and many varieties of cacti, including also the cassava plantations. Here the specimens of *Apodemia* were taken, and a single *Urainia* was observed. The birds characterizing this region are the Spine-tail (*Synallaxis*), the cuckoos (*Diplopterus*) and the honey creepers (*Coereba*); while among mammals the rabbit (*Lepus*) is practically confined to it.

III. The forest region, including the whole of the mountain proper, and the valley in which the little town of El Valle is situated. This is, entomologically, divisible into three sub-regions, thus:

(a). The forest proper, including the greater part of the mountain. This, again is divisible into the drier portions, and the moist areas, in the immediate vicinity of water. Of the drier parts, the genus *Morpho* is the characteristic feature, which in the neighborhood of streams occur such forms as *Ithomia* and *Eurema albula*, and, in the lower portions, *Heliconius*.

(b). The intermediate forest region; where the little stream known as "El Rio," hardly more than a brook at the time of my visit, emerges from the thickly wooded area. This sub-region is the home of *Amphichlora poscidon* (see below), and in it *Heliconius melpomene* is found in greatest abundance.

(c). The valley region; consisting of cleared land with groves of cocoanut palms, interspersed with grassy patches, and the wooded borders of the river bed, which, at this season, is wholly without water. Here occur in abundance practically all the Pieridæ and Hesperidæ of the island, and such genera as *Eubagis*, *Agraulis*, *Lycæna*, *Euptychia*, *Mestra*, *Thecla*, *Anosia*, and *Amphichlora (ferentina)*. It was in this region that I saw the only specimens of *Papilio*, *Colaenis*, and *Opsiphanes* observed.

The whole fauna of Margarita is derived, as is that of the island of Trinidad, from South America, no purely West Indian forms being present, so far as known, among the birds, mammals, fresh-water fishes, or Lepidoptera. In fact, among the birds there seems to be a regular migration between the island and the mainland in the case of certain species (as the parrakeet); and I have seen numbers of Pieridæ (*Aphrissa*, *Phoebis*, *Callidryas*) in the channel, midway between the island and the Venezuelan shore.

The summer of 1901 was very dry* on Margarita, due to the partial failure of the spring rains. This may in some degree account for the paucity of the lepidopterous fauna, as represented by my collection. But it is true, without doubt, that there are many species, either local or erratic in occurrence, which

*While in Barbados, in January, 1904, Mr. L. T. Spencer, F. R. G. S., who has lately spent considerable time on Margarita, informed me that water was now scarcer than ever; so much so indeed that the English pearl fisheries company at Portlamar were forced to depend on distilled sea water. The cutting down of the forests to build ships is without doubt the cause of this, as it is on the English West Indian island of Carriacou.

cannot be obtained except by a long residence in the locality. Captain Robinson has sent me a partial list of the lepidoptera he collected here. It contains ten species, only two of which are represented in my lot, which brings out graphically the difficulty of obtaining a complete list of the butterflies and moths of any given locality in the tropics.

PAPILIONIDÆ.

Papilio thoas Linn.

On Margarita I saw a butterfly apparently referable to this common species, although much below the average size, which I was unable to capture, owing to the nature of the vegetation. Captain Robinson writes me that he collected here an undescribed dwarf variety of this insect.

PIERIDÆ.

While approaching the coast of Venezuela, I saw large numbers of Pieridæ, flying over the water in small scattered groups. On the mountain sides above La Guaira I observed thousands of these insects, all moving, as were those over the water, toward the east. On the way from La Guaira to Caracas, as well as on the mountain slopes in the vicinity of the latter city, they could be counted by hundreds, all, without exception, moving toward the east.* It seemed to be a migration, which was following the line of the coast, and going in the general direction whence came the trade winds.**

Leptalis sp.

An undescribable species of this genus was collected by Captain Robinson on the island, but subsequently lost.

Pontia monuste Linn.

The most abundant butterfly on Margarita; it occurs in the cocoanut groves, and especially in the patches of rank grass about El Valle. The majority of the examples were in worn condition. In the early morning it is commonly found clinging to the grass-blades and leaves, where it is a conspicuous object.

*Mr. W. E. Broadway, Curator of the Botanic Station at Grenada, B. W. I., who lived for many years in Trinidad and who is an enthusiastic entomologist, tells me that *Urania leilus* visits Trinidad every year from the mainland, coming over by hundreds, its movements being apparently comparable to those here described as observed among the Pieridæ.

**For a more detailed account, see Canadian Entomologist, Aug., 1903, p. 219.

Callidryas eubule Linn.

Common on Margarita.

Aphrissa statira Cramer.

Common, but not so much so as *Callidryas eubule*.

Phoebis argante Fabr.

Common at El Valle, associating with *C. eubule* and *A. statira*.

Gonepteryx clorinde Godt.

Occurred about El Valle, but was not abundant.

Kricogonia lyside Godt.

Two examples, a male and a female, taken near El Valle.

Pyrisita proterpia Fabr.

Obtained by Captain Robinson.

Pyrisita gratiosa Doubl. & Hew.

Four specimens obtained near El Valle. They are all paler than that figured by Doubleday and Hewitson, and than others from Central America which I have examined.

Eurema limbia Felder.

Fairly common. The examples are smaller than Godman and Salvin's figure (*Biol. Cent. Am., Rhopalocera* pl. 63, fig. 13) and the black border of the secondaries is not so broad, being generally reduced to a series of black points.

Eurema albula Cramer;

Specimens from Margarita are rather more heavily bordered than those from Panama, and the tinge of sulphur at the base of the wings is more pronounced.

This species was abundant in the deep forest in the vicinity of the water courses, but did not occur on the lower slopes of the mountain, nor about El Valle.

Eurema lydia Felder.

One specimen obtained.

Eurema vitellina Felder.

Occurred about El Valle.

NYMPHALIDAE.

Colaenis julia Fabr.

Seen on two occasions near El Valle, but eluded capture.

Agraulis vanillae Linn.

With the exception of *Pontia monuste*, this was the commonest butterfly occurring most abundantly in the cocoanut groves, especially in the more shaded portions. In flight it closely resembles *Colaenis julia*.

Apodemia crostratus Doubl. & Hew.

Specimens from Margarita have the black markings less extensive than in those figured by Doubleday and Hewitson, and by Staudinger.

This butterfly was found on the scrubby hillsides about El Valle. It was often seen in the hottest places, where there was practically no vegetation. It is readily captured, resembling in its habits *Euphydryas phaeton*.

Mestra hypermnestra Hubn.

Very common in the cocoanut groves and about the roadsides near El Valle.

Junonia coenia Hubn.

Common in the cassava plantations, about the borders of the cocoanut groves, and in the hotter portions of the groves themselves.

Eunica monima Cramer.

One battered example secured.

Eubagis agacles Dalm.

Several specimens obtained about El Valle.

Eubagis thesuis Felder.

Common in the cocoanut groves about El Valle, occurring with *E. agacles*, but more abundant than that species. The contrasting black and white of its wings make it a rather conspicuous object, considering its size.

Amphichlora ferentina Godt. [Plate I. fig. 2.]

Common in the cocoanut groves about El Valle. When flying it occasionally produces the clicking sound so characteristic of the group, and it always alights head down. When alarmed, it seldom goes far, often only to the next tree. Its flight is, as a rule, low, rather swift, and in a straight line, reminding one of the flight of *Argynnis lathonia* or of *Euptoieta claudia*, but is more hurried than that of either of these.

Specimens from Margarita differ from the continental examples which I have examined in being uniformly smaller, with a greater amount of white in the ground color of the wings, particularly of the secondaries.

Amphichlora poseidon, new species. [Plate 1. fig. 1.]

Type locality, El Valle, Island of Margarita, Venezuela.

Expanse, 2.6 in.

General ground color of the secondaries and basal third of primaries, a uniform pale dusty bluish gray, with reflections of reddish bronze.

Primaries. Outside of a crenulate line beginning two-thirds of the distance from the base of the wings to the end of the cell, and extending in a direction almost at right angles to the costal margin to a point one-quarter of an inch from the outer edge of the wing, on the posterior border, chalky white, with a narrow line of gray in the cell near its distal extremity, and a wavy gray line parallel to the outer border of the wing, beginning a quarter of an inch from the distal end of its inferior margin, and extending to the vein passing from the middle of the distal end of the cell to the edge of the wing, then turning and running to the costal margin in a direction at right angles to it. The distal border of the primary is light gray, interrupted in seven places by white streaks, the sixth from the apex being almost as wide as the distance apart of the veins between which it occurs. Just inside this border is a row of five white spots, separated from the general ground color by irregular borders of light bluish gray. The first two of these spots are small, and are situated at the apex of the wing; the third, which is larger, is separated from the second by two veins. The fourth, which is the largest of all, is separated from the third by one vein, and the fifth, which is small, is one vein beyond the fourth. Midway between the two apical spots and the wavy line mentioned above, there is a patch of light gray, which extends as far as the second vein from the costal margin. The part of the wing proximal to

the crenulate line before mentioned is bluish gray, with two brownish zigzag lines running parallel to the outer margin of the wing, from the cell to the inferior border. In the cell there is a faintly enclosed median spot, in the middle of which there is a tinge of rufous.

Secondaries. Ground color bluish gray, with a slightly darker border, separated off by a wavy line of brown. Inside of this border are four ocelli, the two anterior being rather smaller than the others, and having white centres bounded proximally by crescents of dark brown. The two posterior ocelli have a median transverse band of black, with a lunate spot of white in the distal, and a corresponding patch of rufous in the proximal half. Inside of the row of ocelli is an irregular line of brown. Inside this line there are a few spots separated off from the ground color by narrow dusky lines, as follows: in the cell, about one quarter of an inch from the proximal end there is a double spot, extending transversely across the cell, and anterior to this a small circular spot. Just distal to this series, is a row of four spots, the most anterior of brown, and close to the small circular spot just mentioned; the next gray, and just the size of the anterior circular spot of the series proximal to this; the third small, and wholly brown, and the last, which closes the cell, long and narrow, with a gray centre.

The under surface resembles that of *A. ferentina*, but the brown markings are narrower, the rufous centre of the spot which occupies the middle of the central cell on the primaries lighter, and the whole surface shows a more pronounced coppery reflection. The tips and under surface of the antennæ are light rufous.

This species is readily distinguished from *A. ferentina* by the great amount of white on the primaries, and its lighter bluish color, bronzy reflections, small size, and finer markings on the lower surface. The two are easily recognizable in life at a considerable distance.

From all others of the genus it is distinguished by the colors as described.

Messrs. Godman and Salvin mention (*Biologia Centr. Amer. Rhopalocera* p. 269) a peculiar specimen of *Ageronia glaucanome* which was taken at Manaure in northern Colombia, in which the cretaceous white of the primaries is more extensive, and more broken up with the gray marks than in the normal form. They state further that "the discrepancies are in the direction of *A. ferentina*, and the specimen may prove to be an extreme form of that insect, or a new species." From this very meagre description, it would seem that the butterfly referred to was *A. poseidon*; but we cannot be entirely sure; however, it is very possible that this species will be found to occur in suitable localities throughout Venezuela and Colombia.

On Margarita, as has been mentioned above, *A. poseidon* is found in the damper spots on the border of the forest, and does not seem to frequent the open

so much as does *A. ferentina*, preferring, as a rule, the same kind of situations as those in which *Peridromia amphinome* commonly is found.

Historis odius Fabr.

While on the beach at Carupano I saw what I was positive was an example of this species, coming in over the sea from the direction of Margarita. It passed within a few feet of me, but I was unable to secure it. Captain Robinson tells me he secured an "*Aganisthos*" on the island, which might possibly have been of this species.

AGAPETIDAE.

Euptychia phares Godt.

The commonest of the genus of Margarita, occurring abundantly in the coconut groves, especially in the more shaded portions underneath the mango or other thick trees. Godman and Salvin say that this species is nowhere abundant, though having a very extensive range.

Euptychia camerta Cramer (*soxybius* Fabr.)

One specimen obtained, in company with *E. phares*.

Euptychia ocirrhoe Fabr.

Two worn and faded examples obtained near El Valle.

Euptychia renata Cramer.

One specimen secured.

MORPHIDAE.

Morpho sp.

Examples of this genus were sometimes seen in the forest, but never except as one looked down over the tree tops from some elevation.

BRASSOLIDAE.

Opsiphanes sp.

While resting under a mango tree one day, my attention became fixed on a peculiar projection from the otherwise perfectly smooth trunk. Investigation showed it to be a butterfly of this genus, perched head downward. As I had no net at the time it escaped, and I did not find any others.

HELICONIDAE.

Heliconius melpomene Linn.

Abundant on the lower slopes of the mountain, in the vicinity of water, especially at the place where "El Rio" emerges from the forest. It often strays into the cocanut groves, and sometimes into the street of El Valle.

ITHOMIDAE.

Ithomia andromica Hew.

Common in the forest, in the immediate vicinity of streams.

Ithomia hippocrenis Bates.

One specimen obtained in the forest near "El Rio."

Ithomia sp.

Captain Robinson reports finding two additional species of this genus on Margarita.

LYMNADIDAE.

Anosia plexippus Linn.

Common in suitable localities, particularly about the butterfly weed (*Asclepias tuberosa*).

Anosia berenice strigosa Bates.

Common, with *A. plexippus*.

LYCAENIDAE.

Thecla argiva Hew.

One specimen from El Valle.

Thecla sp.

A medium sized species of this genus was taken at El Valle, but was so worn as to make identification impossible.

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